FIG. 1

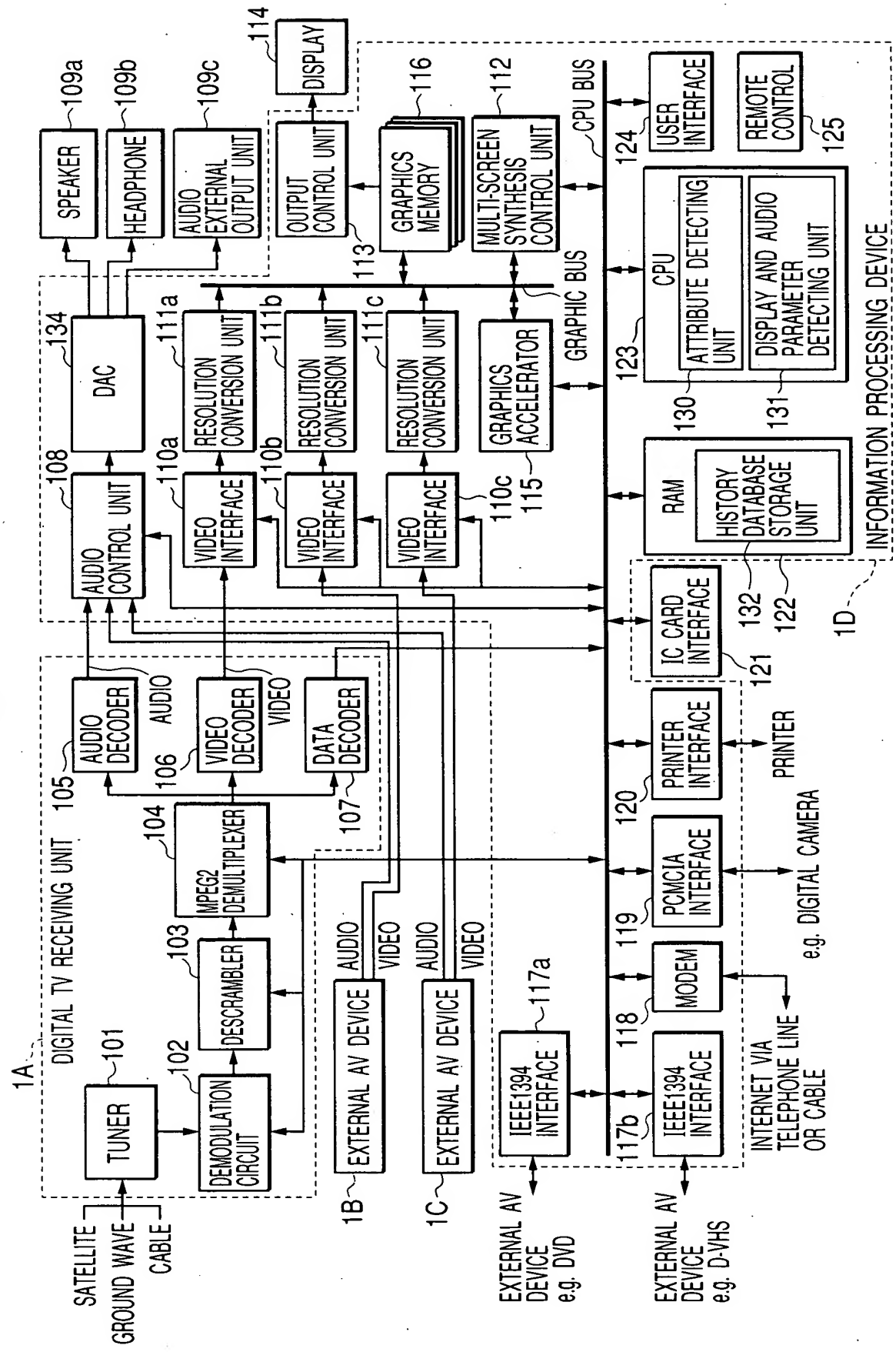

1A
DIGITAL TV RECEIVING UNIT
SATELLITE
GROUND WAVE
CABLE
TUNER
101
DEMODULATION CIRCUIT
102
DESCRAMBLER
103
MPEG2 DEMULTIPLEXER
104
AUDIO DECODER
105
AUDIO
VIDEO DECODER
106
VIDEO
DATA DECODER
107
1B
EXTERNAL AV DEVICE
AUDIO
VIDEO
1C
EXTERNAL AV DEVICE
AUDIO
VIDEO
EXTERNAL AV DEVICE e.g. DVD
EXTERNAL AV DEVICE e.g. D-VHS
IEEE1394 INTERFACE
117a
IEEE1394 INTERFACE
117b
118
MODEM
INTERNET VIA TELEPHONE LINE OR CABLE
119
PCMCIA INTERFACE
e.g. DIGITAL CAMERA
120
PRINTER INTERFACE
PRINTER
121
IC CARD INTERFACE
122
1D
INFORMATION PROCESSING DEVICE
AUDIO CONTROL UNIT
108
DAC
134
SPEAKER
109a
HEADPHONE
109b
AUDIO EXTERNAL OUTPUT UNIT
109c
VIDEO INTERFACE
110a
VIDEO INTERFACE
110b
VIDEO INTERFACE
110c
RESOLUTION CONVERSION UNIT
111a
RESOLUTION CONVERSION UNIT
111b
RESOLUTION CONVERSION UNIT
111c
OUTPUT CONTROL UNIT
113
DISPLAY
114
GRAPHICS MEMORY
116
MULTI-SCREEN SYNTHESIS CONTROL UNIT
112
GRAPHICS ACCELERATOR
115
GRAPHIC BUS
CPU BUS
CPU
123
ATTRIBUTE DETECTING UNIT
130
DISPLAY AND AUDIO PARAMETER DETECTING UNIT
131
RAM
HISTORY DATABASE STORAGE UNIT
132
USER INTERFACE
124
REMOTE CONTROL
125

FIG. 2

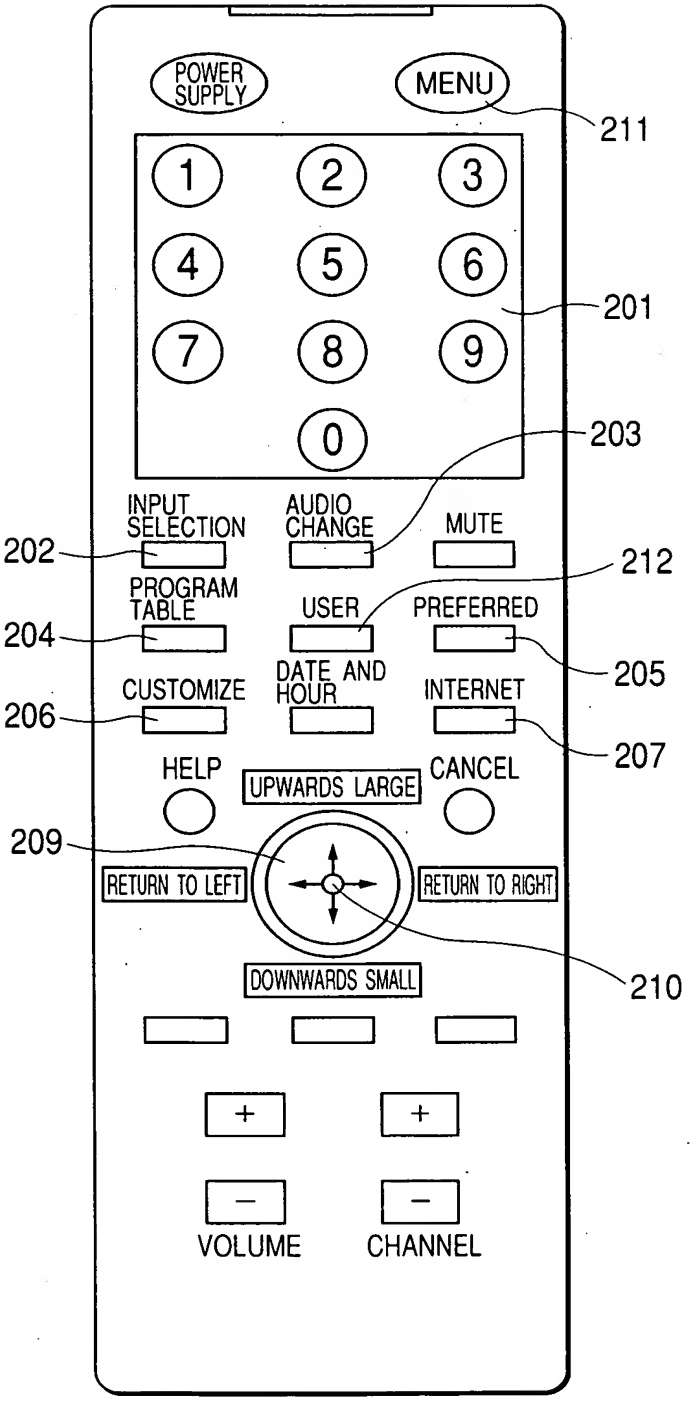
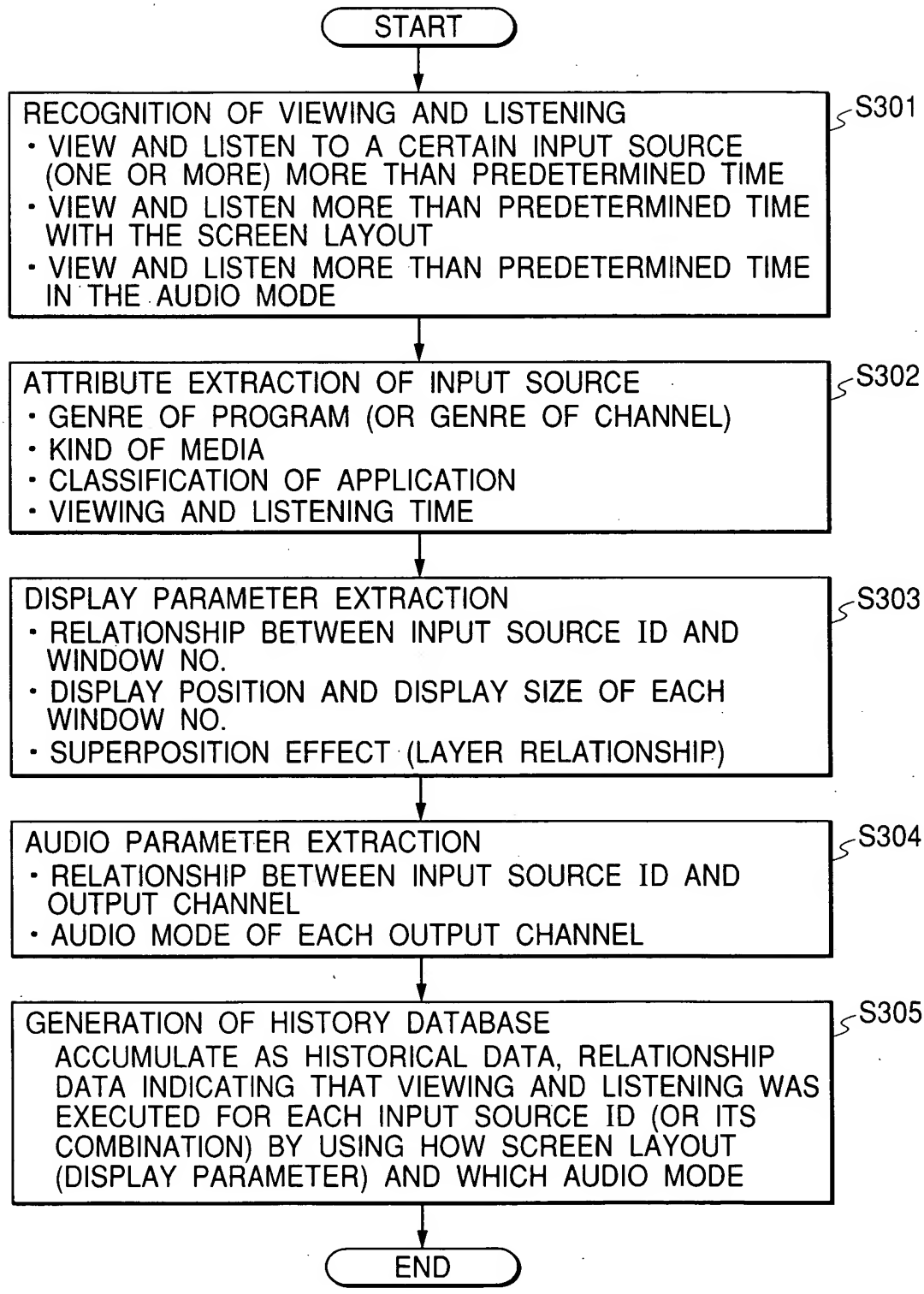

POWER SUPPLY
MENU
211
1
2
3
4
5
6
7
8
9
0
201
203
INPUT SELECTION
AUDIO CHANGE
MUTE
202
212
PROGRAM TABLE
USER
PREFERRED
204
205
CUSTOMIZE
DATE AND HOUR
INTERNET
206
207
HELP
UPWARDS LARGE
CANCEL
209
RETURN TO LEFT
RETURN TO RIGHT
210
DOWNWARDS SMALL
+
+
−
−
VOLUME
CHANNEL

FIG. 3



Post-it® Fax Note 7671

FIG. 4

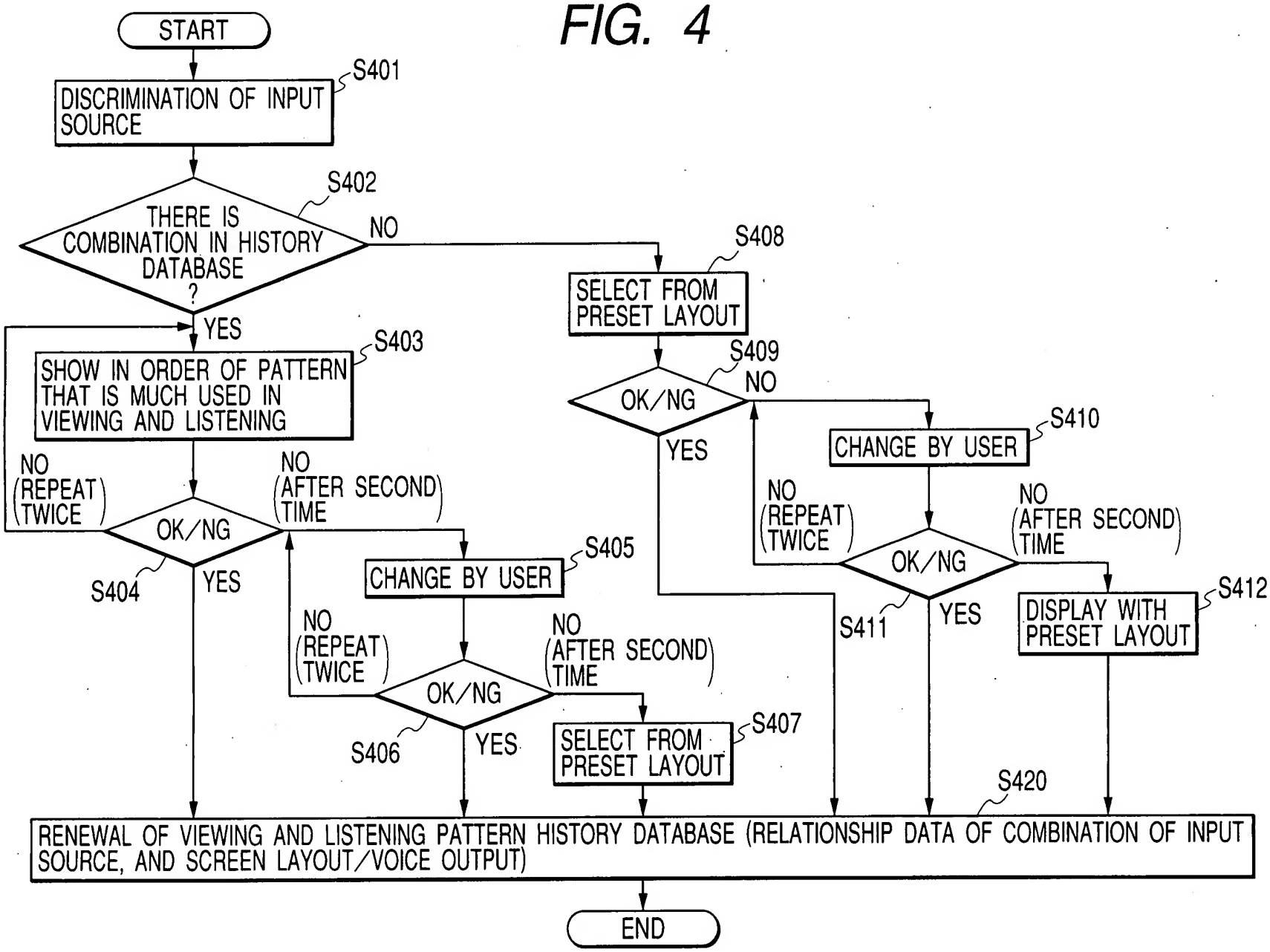

START
S401
DISCRIMINATION OF INPUT SOURCE
S402
THERE IS COMBINATION IN HISTORY DATABASE ?
NO
YES
S403
SHOW IN ORDER OF PATTERN THAT IS MUCH USED IN VIEWING AND LISTENING
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
OK/NG
S404
YES
S405
CHANGE BY USER
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
OK/NG
S406
YES
S407
SELECT FROM PRESET LAYOUT
S408
SELECT FROM PRESET LAYOUT
S409
OK/NG
NO
YES
S410
CHANGE BY USER
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
OK/NG
S411
YES
S412
DISPLAY WITH PRESET LAYOUT
S420
RENEWAL OF VIEWING AND LISTENING PATTERN HISTORY DATABASE (RELATIONSHIP DATA OF COMBINATION OF INPUT SOURCE, AND SCREEN LAYOUT/VOICE OUTPUT)
END

FIG. 5

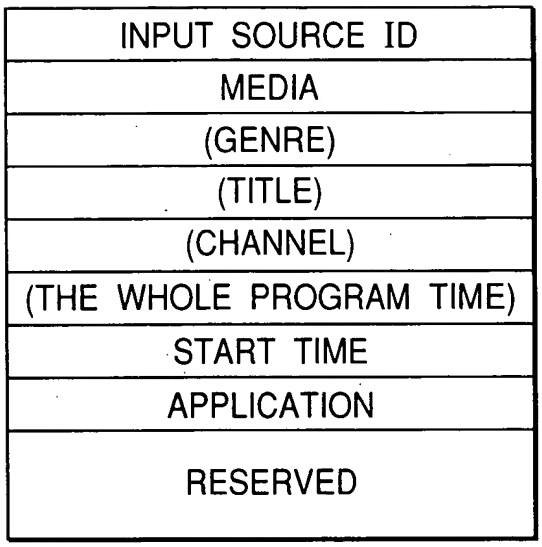


FIG. 6

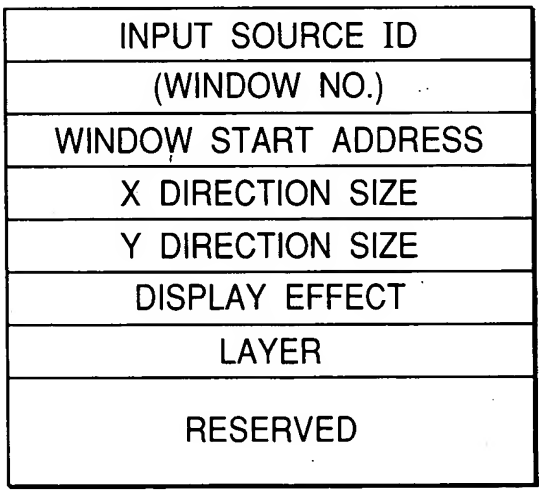
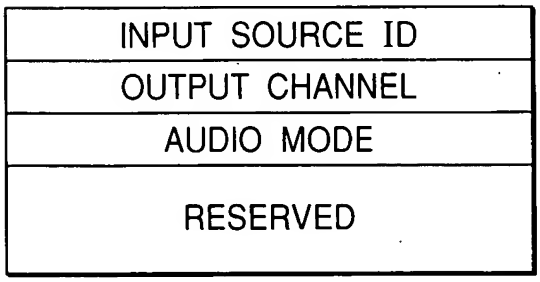


FIG. 7



Copyright © 2004 Epson

FIG. 8A

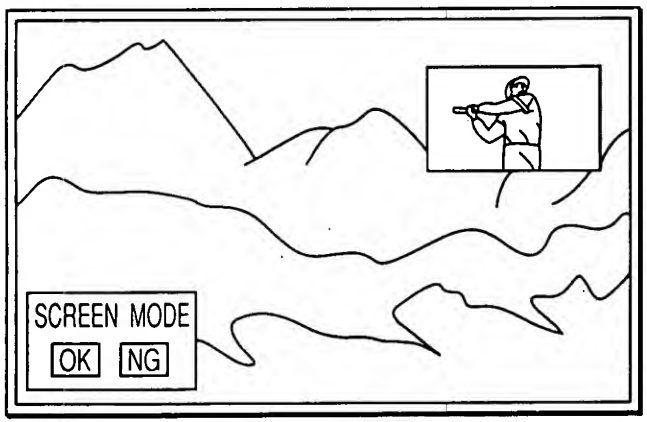


FIG. 8B

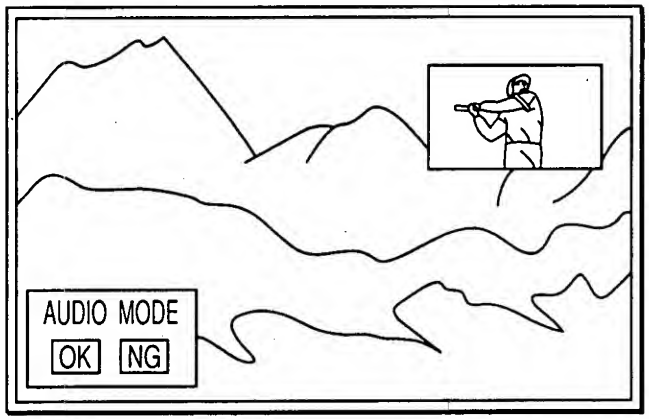


FIG. 9A

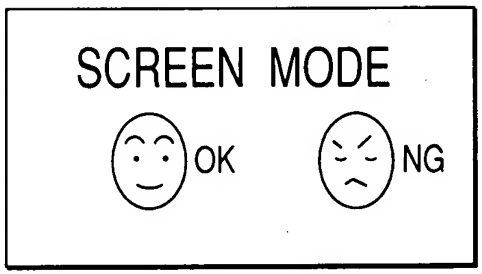


FIG. 9B

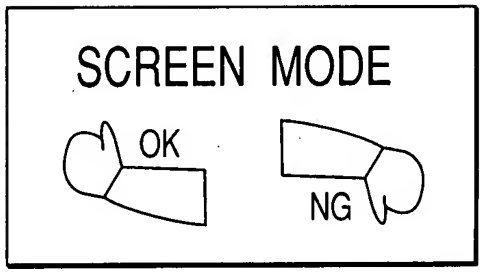


FIG. 10A

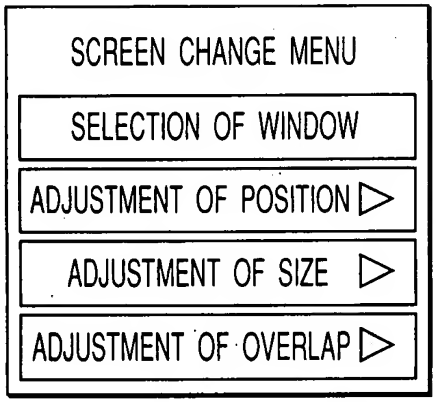
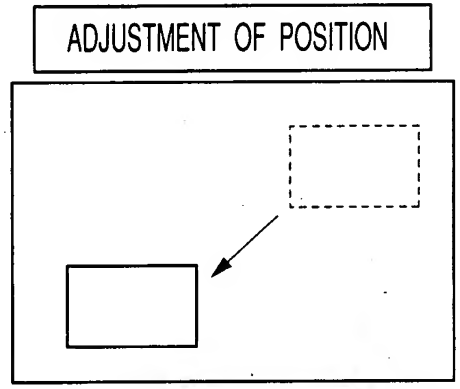
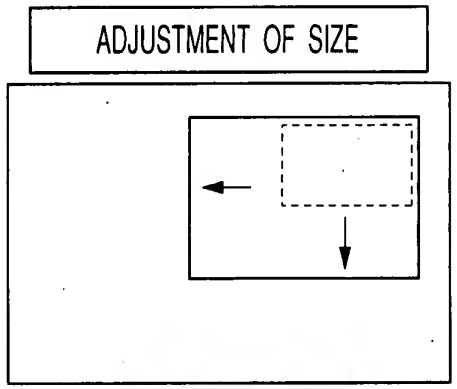


FIG. 10B



PLEASE ADJUST BY DIRECTION KEY ✦ OF REMOTE CONTROLLER
PLEASE PUSH DETERMINATION KEY AT THE TIME OF O.K.

FIG. 10C



PLEASE ADJUST BY DIRECTION KEY ✦ OF REMOTE CONTROLLER
PLEASE PUSH DETERMINATION KEY AT THE TIME OF O.K.

FIG. 11

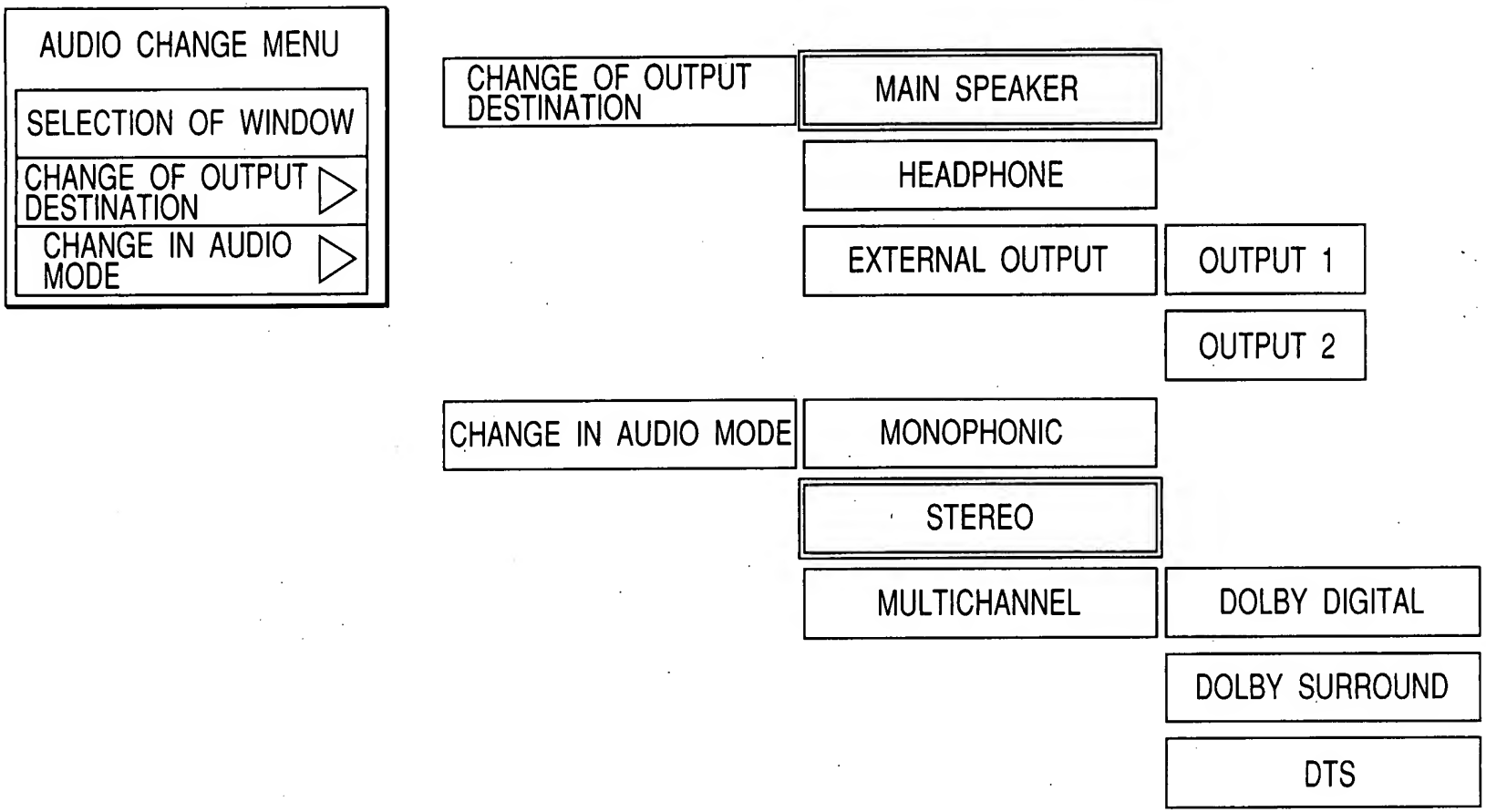

AUDIO CHANGE MENU
SELECTION OF WINDOW
CHANGE OF OUTPUT DESTINATION
CHANGE IN AUDIO MODE
CHANGE OF OUTPUT DESTINATION
MAIN SPEAKER
HEADPHONE
EXTERNAL OUTPUT
OUTPUT 1
OUTPUT 2
CHANGE IN AUDIO MODE
MONOPHONIC
STEREO
MULTICHANNEL
DOLBY DIGITAL
DOLBY SURROUND
DTS

FIG. 12

INPUT SOURCE (ATTRIBUTE)					SCREEN LAYOUT					AUDIO					VIEWING AND LISTENING PATTERN
#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	
TV2	–	–	–	–	L1	–	–	–	–	M1	–	–	–	–	A
TV3	TV2	–	–	–	L1	L2	–	–	–	M2	S1	–	–	–	B
TV4	ITN1	–	–	–	L3	L4	–	–	–	M2	M5	–	–	–	C
EXT1	ITN2	–	–	–	L1	L9	–	–	–	M3	M5	–	–	–	D
TV3	ITN2	–	–	–	L3	L4-1/-2	–	–	–	M1	M5	–	–	–	E
TV1	DATA1	T1	–	–	L3	L10	L11	–	–	M4	M5	M5	–	–	F
TV1	DATA1	T1	DATA2	–	L3	L12	L13	L14	–	M4	M5	M5	M5	–	G
TV1	DATA1	T1	DATA2	DATA3	L15	L12	L13	L14	L16	M4	M5	M5	M5	M5	H

MEANING OF MARK

INPUT SOURCE
TV1 : MEDIA=DIGITAL TV BROADCAST GENRE=NEWS
TV2 : MEDIA=DIGITAL TV BROADCAST GENRE=SPORT
TV3 : MEDIA=DIGITAL TV BROADCAST GENRE=DRAMA
TV4 : MEDIA=DIGITAL TV BROADCAST GENRE=DOCUMENTARY
EXT1 : MEDIA=1394 CONNECTION DEVICE GENRE=MOVIE
ITN1 : MEDIA=INTERNET APPLICATION=INTERNET BROWSER
ITN2 : MEDIA=INTERNET APPLICATION=E-MAIL
DATA1 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=NEWS
DATA2 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=WEATHER REPORT
T1 : MEDIA=INTERNAL FUNCTION APPLICATION=CLOCK DISPLAY

SCREEN LAYOUT
L1 : PARAMETER OF WIDE FULL SCREEN DISPLAY
L2 : PARAMETER OF 1/8 SIZE Pinp DISPLAY AT SCREEN LOWER RIGHT
L3 : WINDOW OF 2/3 SIZE AT SCREEN LEFT HALF
L4-1 : WINDOW OF 1/16 SIZE AT SCREEN CENTRAL PART
L4-2 : WINDOW OF 1/3 SIZE AT SCREEN RIGHT HALF
L5 TO L16 : DISPLAY PARAMETER OF WINDOW LAYOUT SHOWN IN ANOTHER FIGURE
L9 : PARAMETER OF ICON DISPLAY AT SCREEN LOWER RIGHT

AUDIO MODE
M1 : OUTPUT CHANNEL=MAIN SPEAKER MODE=STEREO
M2 : OUTPUT CHANNEL=MAIN SPEAKER MODE=MULTICHANNEL STEREO 1
M3 : OUTPUT CHANNEL=MAIN SPEAKER MODE=MULTICHANNEL STEREO 2
M4 : OUTPUT CHANNEL=MAIN SPEAKER MODE=TWO LANGUAGES
M5 : NON-AUDIO
S1 : OUTPUT CHANNEL=HEADPHONE MODE=STEREO

FIG. 13

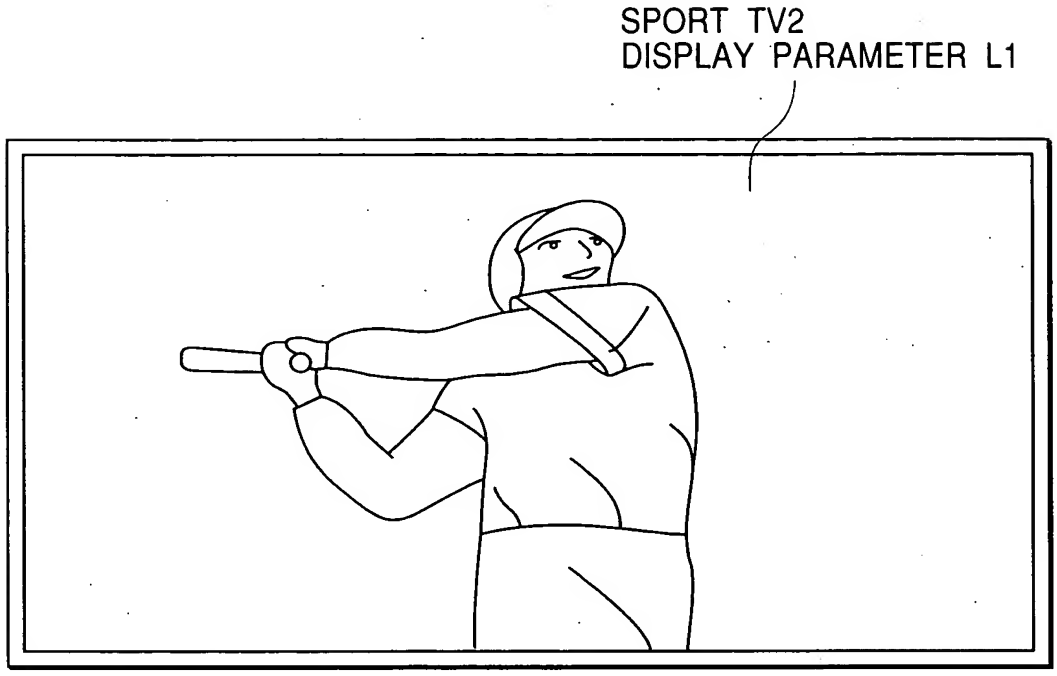

SPORT TV2
DISPLAY PARAMETER L1

FIG. 14

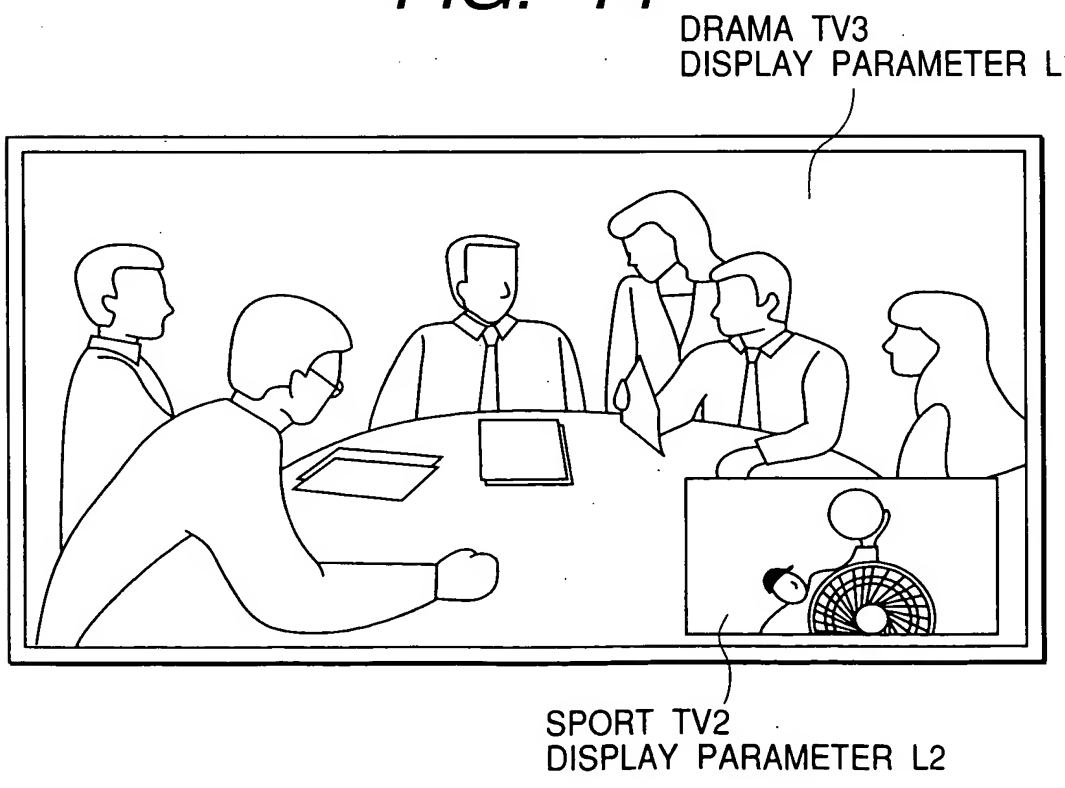

DRAMA TV3
DISPLAY PARAMETER L1
SPORT TV2
DISPLAY PARAMETER L2

FIG. 15

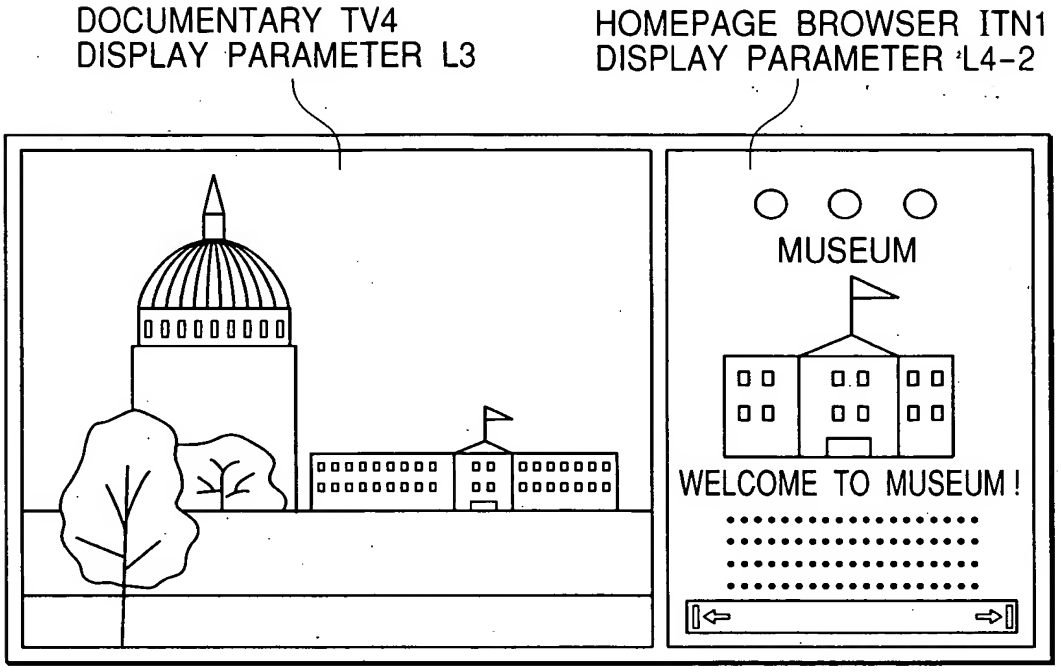


FIG. 16A

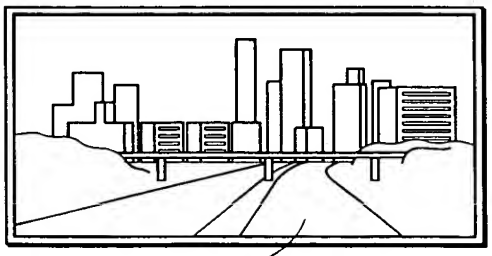


FIG. 16B

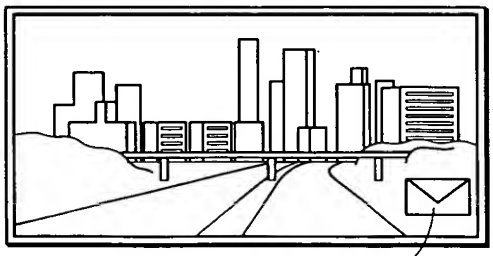
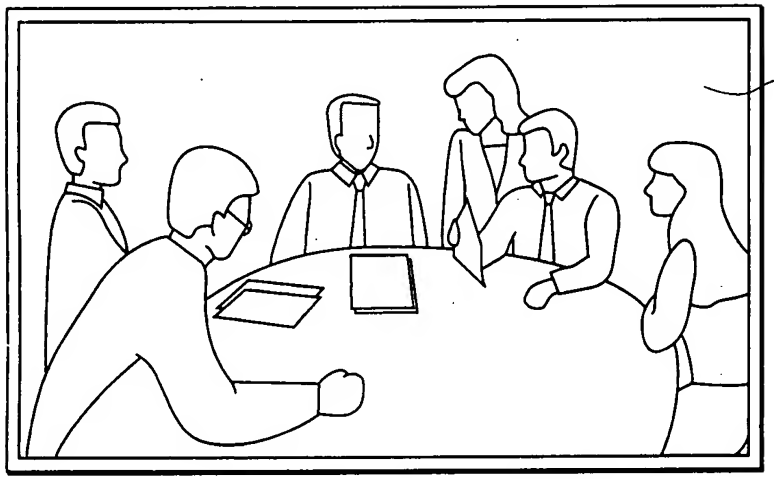
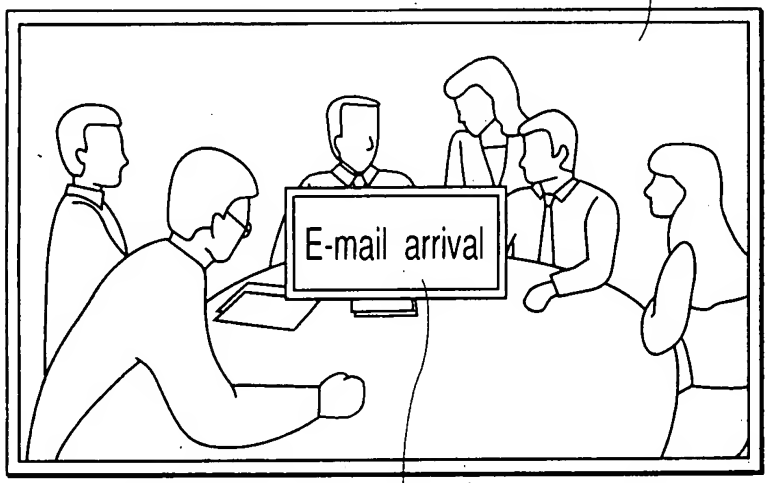


FIG. 17A



DRAMA TV3
DISPLAY PARAMETER L1

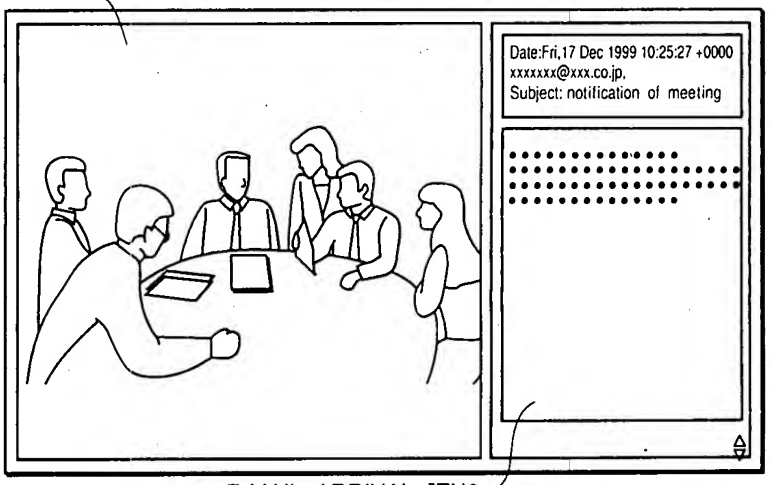
FIG. 17B



DRAMA TV3
DISPLAY
PARAMETER L1

E-MAIL ARRIVAL ITN2
DISPLAY PARAMETER L4-1 (MAIL ARRIVAL INFORMATION AT SCREEN CENTRAL PART)

FIG. 17C



DRAMA TV3
DISPLAY
PARAMETER L3

E-MAIL ARRIVAL ITN2
DISPLAY PARAMETER L4-2 (WINDOW POP-UP)

FIG. 18A

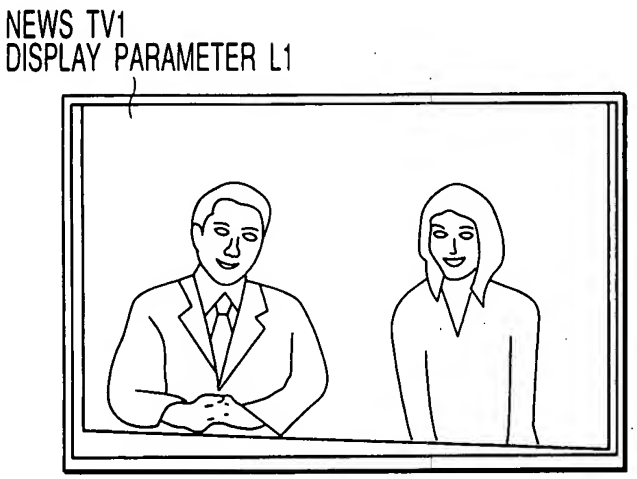


FIG. 18B

VIEWING AND LISTENING PATTERN F

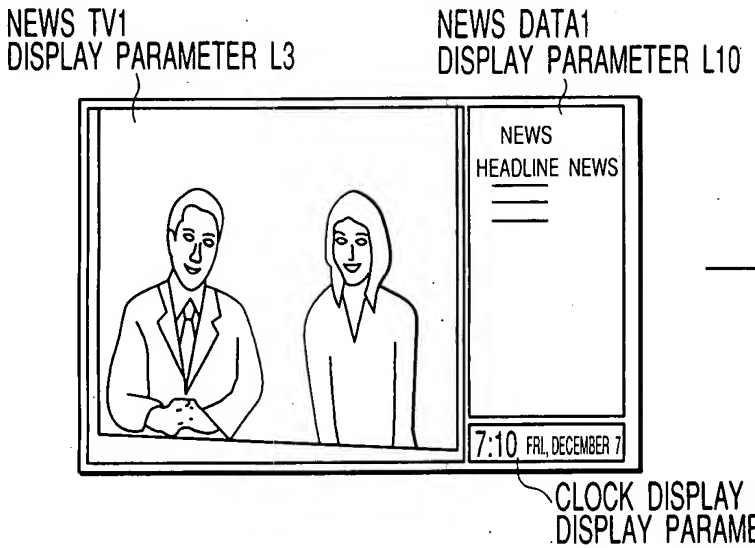


FIG. 18C

VIEWING AND LISTENING PATTERN G

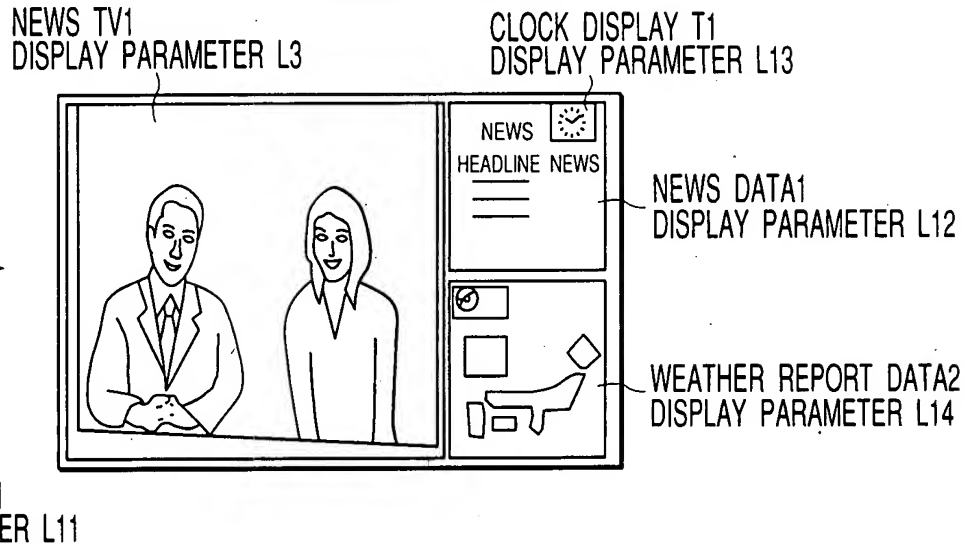


FIG. 18D

VIEWING AND LISTENING PATTERN H

FIG. 19

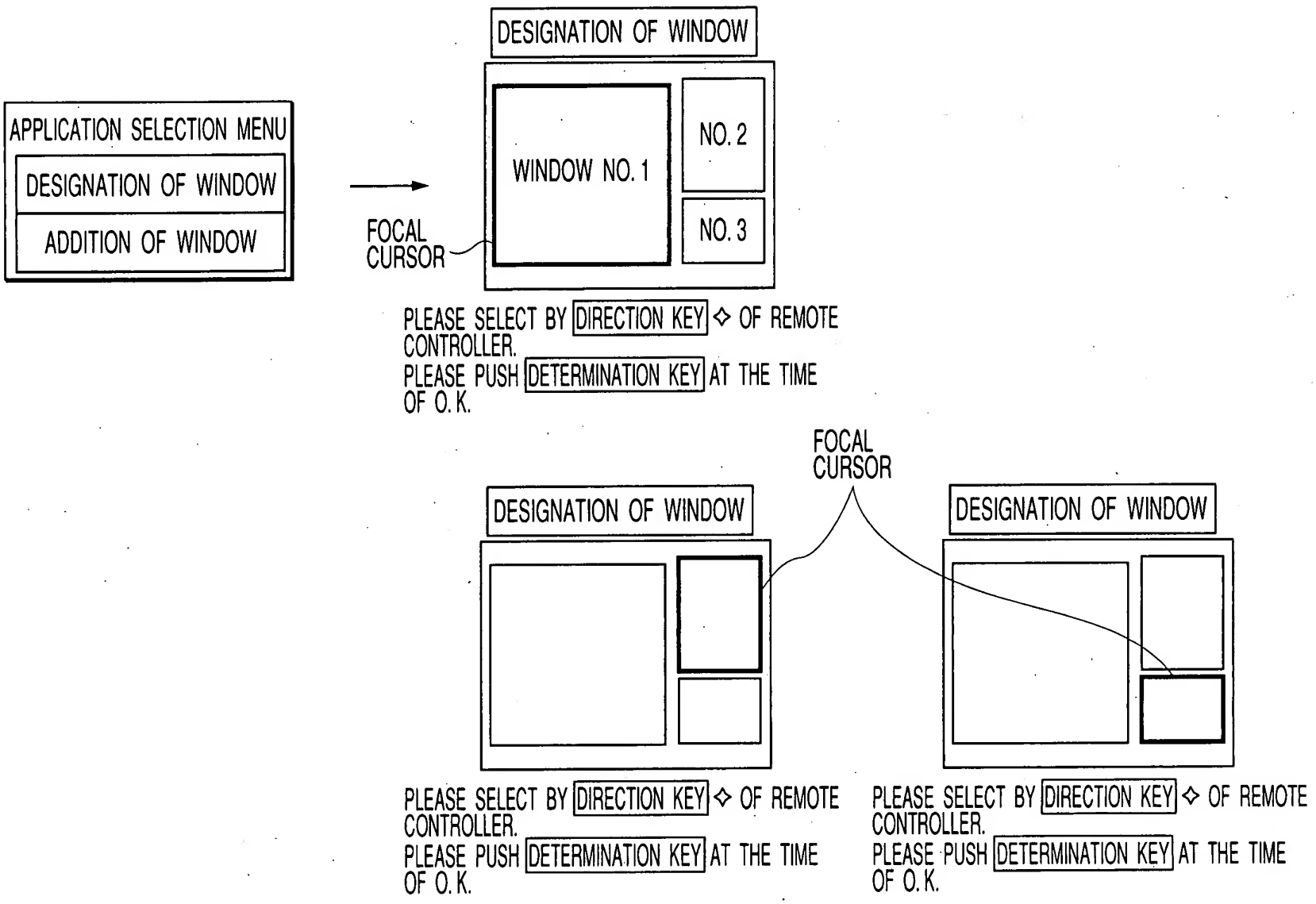

APPLICATION SELECTION MENU
DESIGNATION OF WINDOW
ADDITION OF WINDOW
DESIGNATION OF WINDOW
WINDOW NO. 1
NO. 2
NO. 3
FOCAL CURSOR
PLEASE SELECT BY DIRECTION KEY ✧ OF REMOTE CONTROLLER.
PLEASE PUSH DETERMINATION KEY AT THE TIME OF O. K.
FOCAL CURSOR
DESIGNATION OF WINDOW
DESIGNATION OF WINDOW
PLEASE SELECT BY DIRECTION KEY ✧ OF REMOTE CONTROLLER.
PLEASE PUSH DETERMINATION KEY AT THE TIME OF O. K.
PLEASE SELECT BY DIRECTION KEY ✧ OF REMOTE CONTROLLER.
PLEASE PUSH DETERMINATION KEY AT THE TIME OF O. K.

FIG. 20

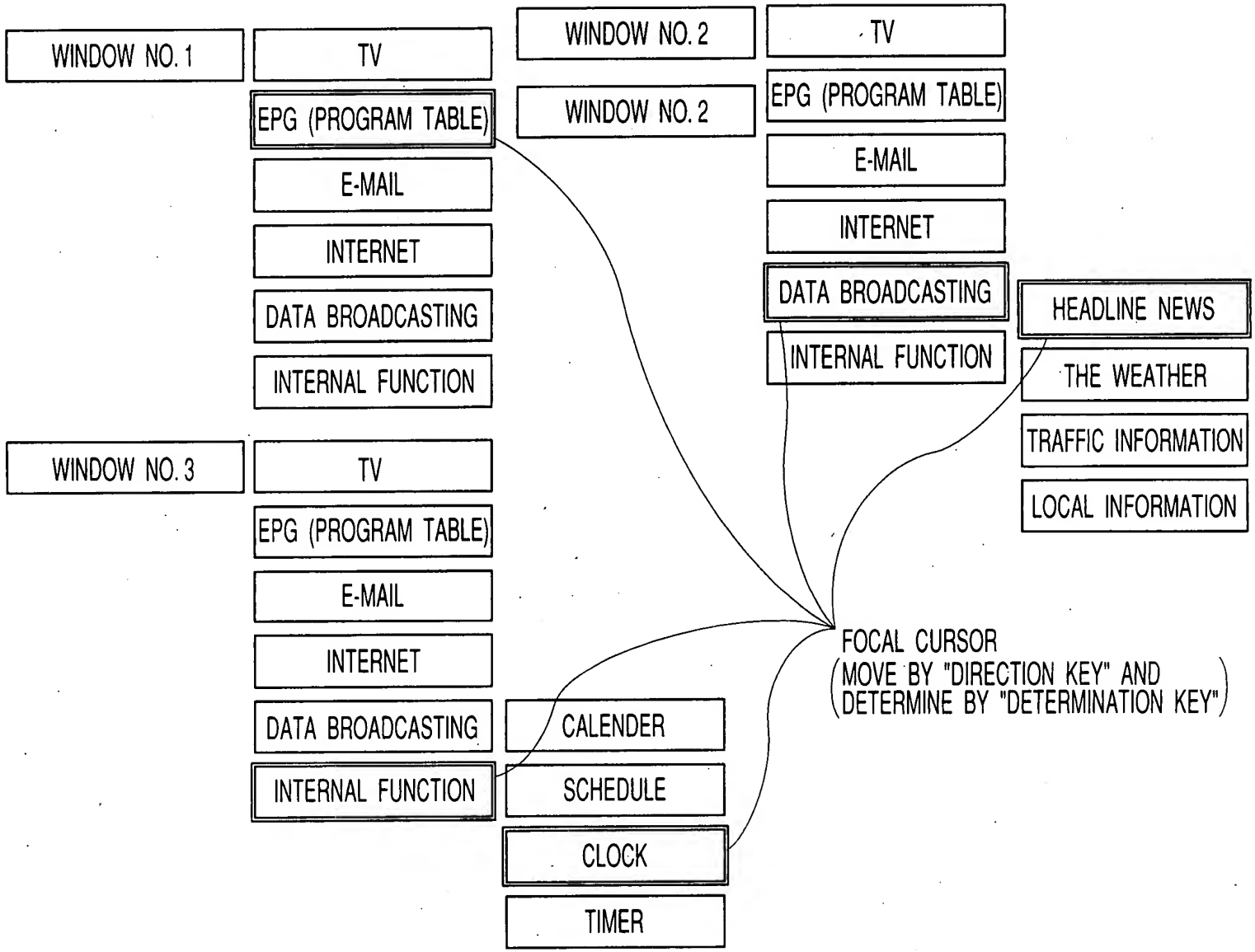

WINDOW NO. 1
TV
EPG (PROGRAM TABLE)
E-MAIL
INTERNET
DATA BROADCASTING
INTERNAL FUNCTION
WINDOW NO. 2
TV
EPG (PROGRAM TABLE)
E-MAIL
INTERNET
DATA BROADCASTING
INTERNAL FUNCTION
HEADLINE NEWS
THE WEATHER
TRAFFIC INFORMATION
LOCAL INFORMATION
WINDOW NO. 2
WINDOW NO. 3
TV
EPG (PROGRAM TABLE)
E-MAIL
INTERNET
DATA BROADCASTING
INTERNAL FUNCTION
CALENDER
SCHEDULE
CLOCK
TIMER
FOCAL CURSOR
(MOVE BY "DIRECTION KEY" AND
DETERMINE BY "DETERMINATION KEY")

FIG. 21

TIME ZONE			INPUT SOURCE (ATTRIBUTE)				SCREEN LAYOUT				VIEWING AND LISTENING				VIEWING AND LISTENING PATTERN
TIME	DAY OF THE WEEK	DAY AND MONTH	#1	#2	#3	#4	#1	#2	#3	#4	#1	#2	#3	#4	
6-7	MON.-FRI.		TV1	DATA1	T1	DATA2	L1	L2	L3	L4	M3	S2	M5	M5	A
7-8	MON.-FRI.		TV2	DATA1	T1	DATA3	L1	L2	L3	L4	M3	S2	M5	M5	B
12-1230	SUNDAY		TV3	–	–	–	L5	–	–	–	M1	–	–	–	C
19-1950	MON.-FRI.		TV2	–	–	–	L5	–	–	–	M1	–	–	–	D
20-21	WEDNESDAY	4-9	TV3	TV4	–	–	L5	L6	–	–	M1	S1	–	–	E
21-23	TUESDAY	10-12	TV5	–	–	–	L5	–	–	–	M2	–	–	–	F
21-23	TUESDAY	10-12	TV5	ITN1	–	–	L5	L7	–	–	M2	M5	–	–	G

MEANING OF MARK

INPUT SOURCE
TV1 : MEDIA=DIGITAL TV BROADCAST GENRE=NEWS Ch=8
TV2 : MEDIA=DIGITAL TV BROADCAST GENRE=NEWS Ch=1
TV3 : MEDIA=DIGITAL TV BROADCAST GENRE=VARIETY Ch
TV4 : MEDIA=DIGITAL TV BROADCAST GENRE=SPORT Ch
TV5 : MEDIA=DIGITAL TV BROADCAST GENRE=MOVIE Ch
ITN1 : MEDIA=INTERNET APPLICATION=E-MAIL
DATA1 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=NEWS
DATA2 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=WEATHER REPORT
DATA3 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=TRAFFIC INFORMATION
T1 : MEDIA=INTERNAL FUNCTION APPLICATION=CLOCK DISPLAY

SCREEN LAYOUT
L1 TO L7 : DISPLAY PARAMETER OF WINDOW LAYOUT SHOWN IN ANOTHER FIGURE

AUDIO MODE
M1 : OUTPUT CHANNEL=MAIN SPEAKER MODE=STEREO
M2 : OUTPUT CHANNEL=MAIN SPEAKER MODE=MULTICHANNEL STEREO 1
M3 : OUTPUT CHANNEL=MAIN SPEAKER MODE=TWO LANGUAGES
M5 : NON-AUDIO
S1 : OUTPUT CHANNEL=HEADPHONE MODE=STEREO
S2 : OUTPUT CHANNEL=HEADPHONE MODE=TWO LANGUAGES

FIG. 22

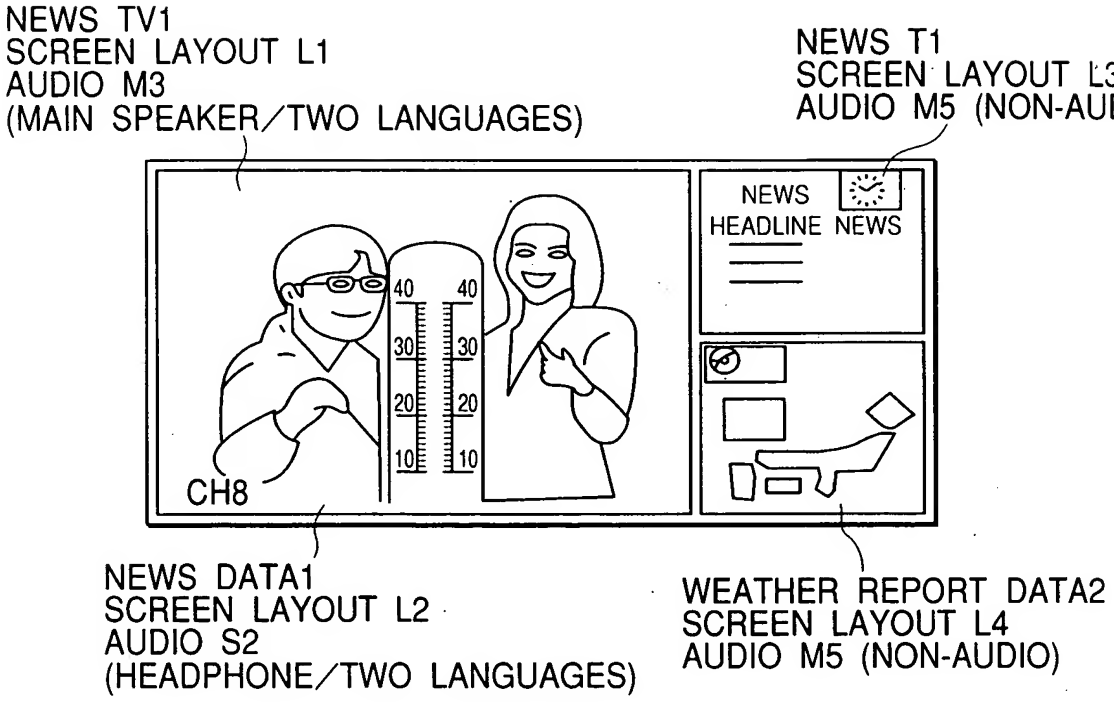

NEWS TV1
SCREEN LAYOUT L1
AUDIO M3
(MAIN SPEAKER/TWO LANGUAGES)
NEWS T1
SCREEN LAYOUT L3
AUDIO M5 (NON-AUDIO)
NEWS
HEADLINE NEWS
CH8
NEWS DATA1
SCREEN LAYOUT L2
AUDIO S2
(HEADPHONE/TWO LANGUAGES)
WEATHER REPORT DATA2
SCREEN LAYOUT L4
AUDIO M5 (NON-AUDIO)

FIG. 23

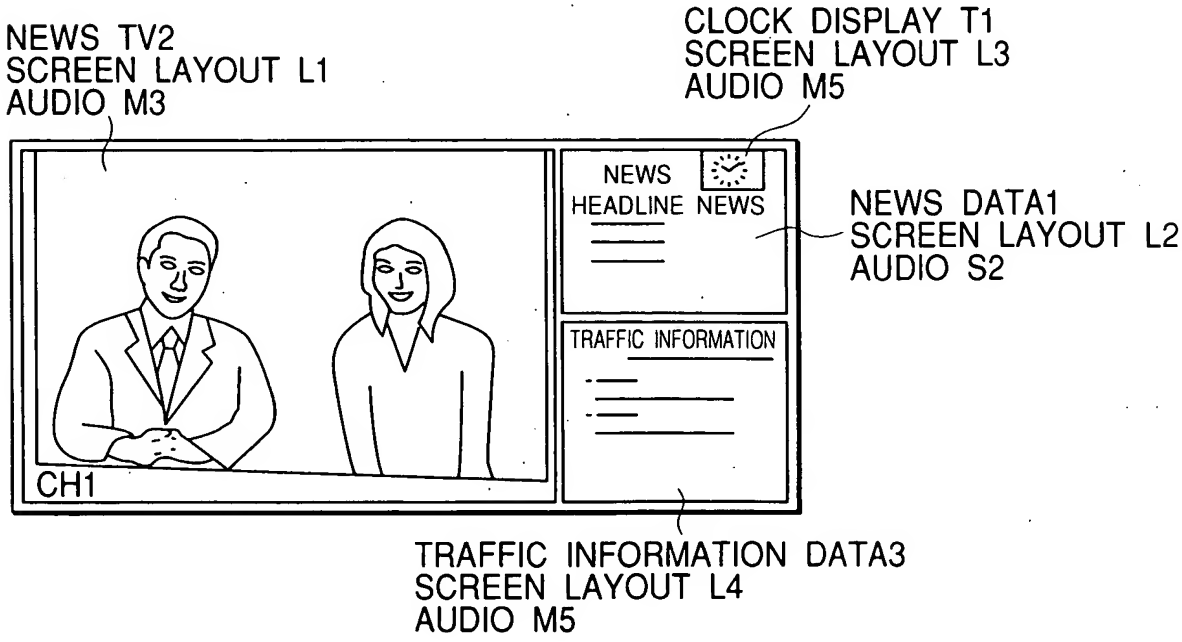

NEWS TV2
SCREEN LAYOUT L1
AUDIO M3
CLOCK DISPLAY T1
SCREEN LAYOUT L3
AUDIO M5
NEWS
HEADLINE NEWS
NEWS DATA1
SCREEN LAYOUT L2
AUDIO S2
TRAFFIC INFORMATION
CH1
TRAFFIC INFORMATION DATA3
SCREEN LAYOUT L4
AUDIO M5

FIG. 24

VARIETY Ch TV3
SCREEN LAYOUT L5 (WIDE FULL SCREEN)
AUDIO M1 (MAIN SPEAKER/STEREO)

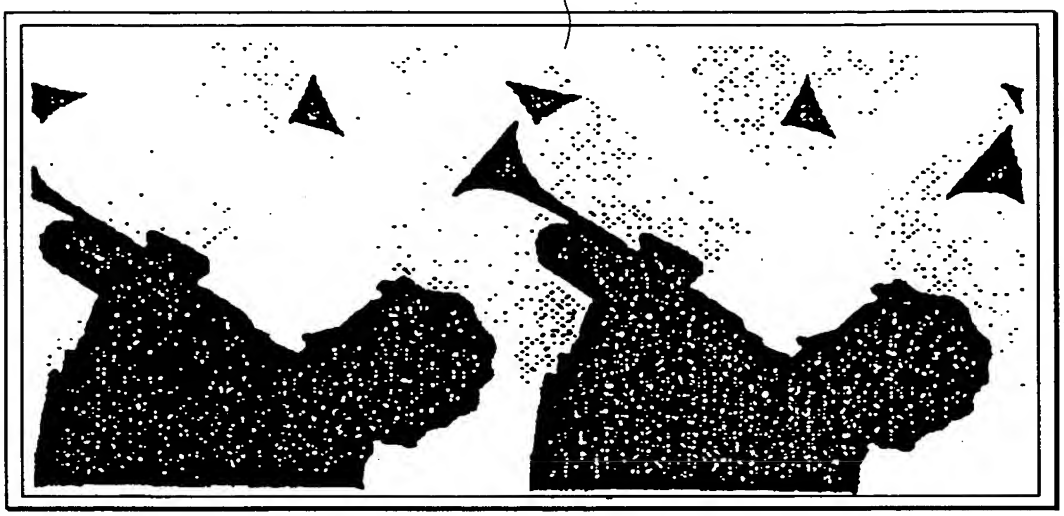


FIG. 25

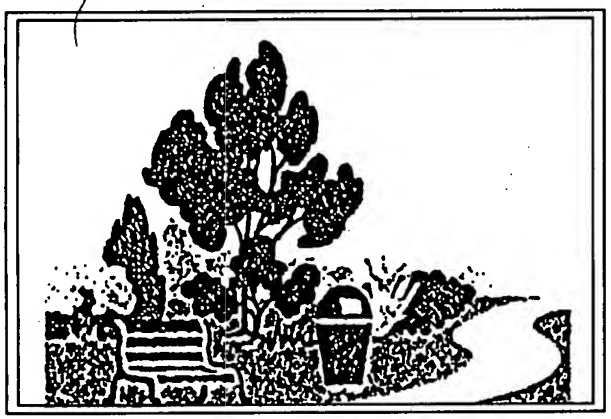
VARIETY Ch TV3
SCREEN LAYOUT L5 (WIDE FULL SCREEN)
AUDIO M1 (MAIN SPEAKER/STEREO)

VARIETY Ch TV4
SCREEN LAYOUT L6 (LOWER RIGHT 1/8 SIZE PinP)
AUDIO S1 (HEADPHONE/STEREO)

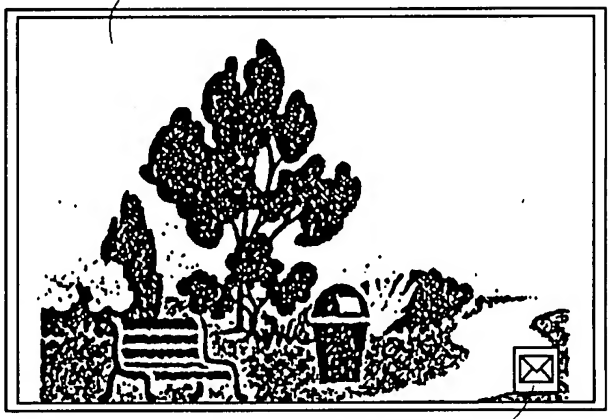
Exhibit 2054 - Page 28 of 95

FIG. 26

MOVIE TV5
SCREEN LAYOUT L5 (WIDE FULL SCREEN)
AUDIO M2 (MAIN SPEAKER/MULTICHANNEL STEREO)



MOVIE TV5
SCREEN LAYOUT L5 (WIDE FULL SCREEN)
AUDIO M2 (MAIN SPEAKER/MULTICHANNEL STEREO)



E-MAIL ARRIVAL ITN1
SCREEN LAYOUT L7 (ICON DISPLAY)
AUDIO M5 (NON-AUDIO)

EPO - DG 1 25.05.2005

FIG. 27

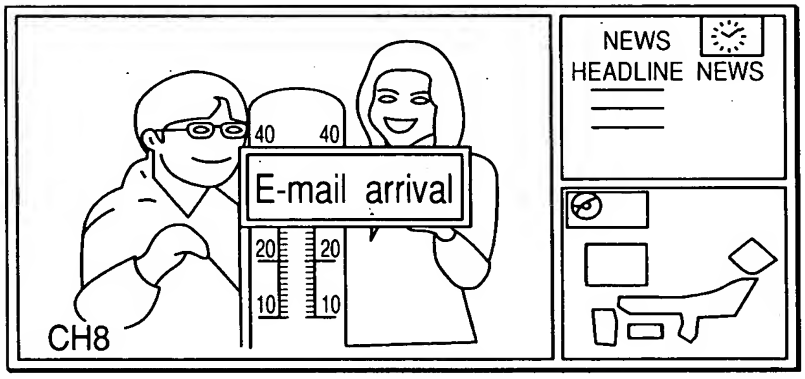


FIG. 28

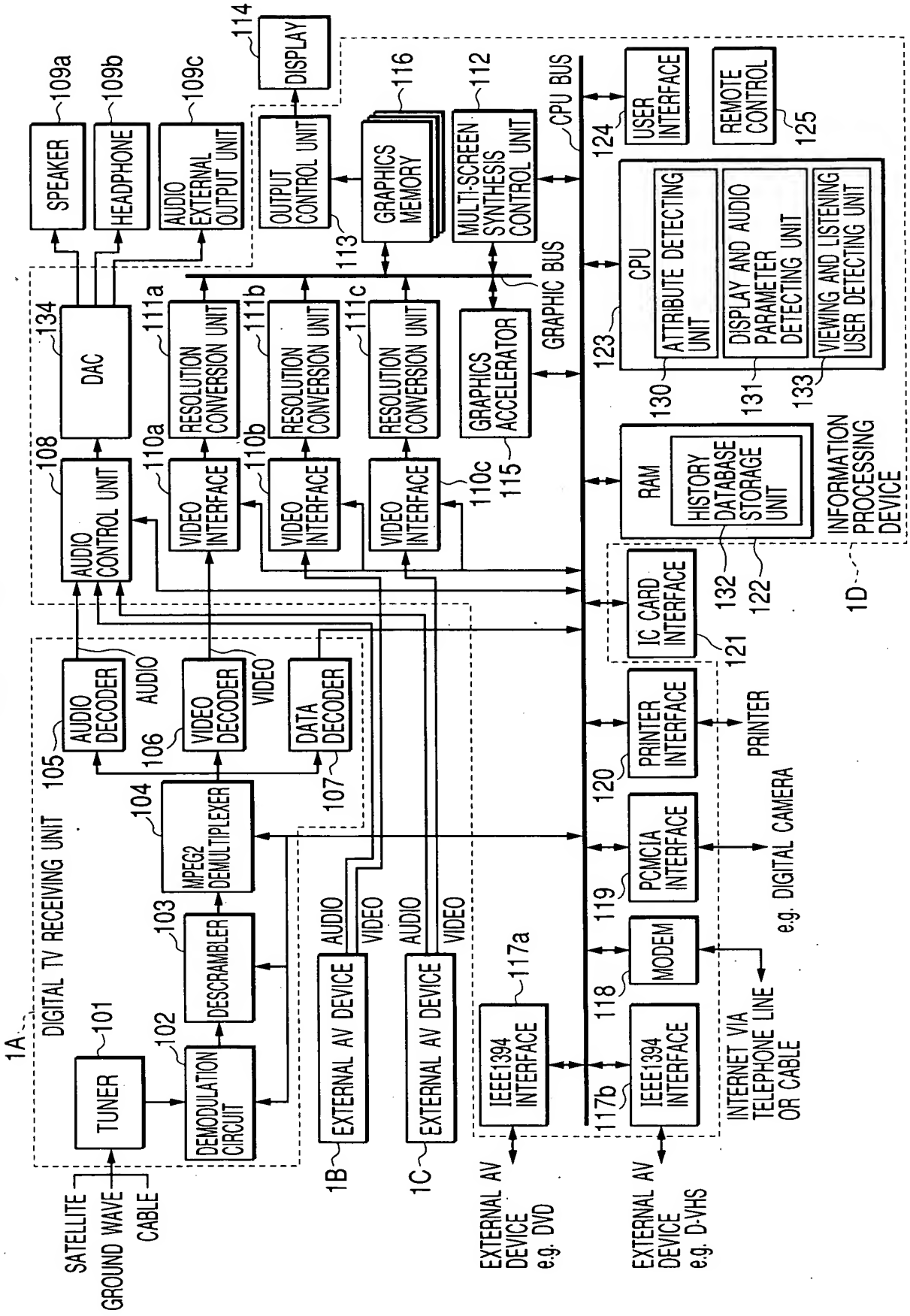
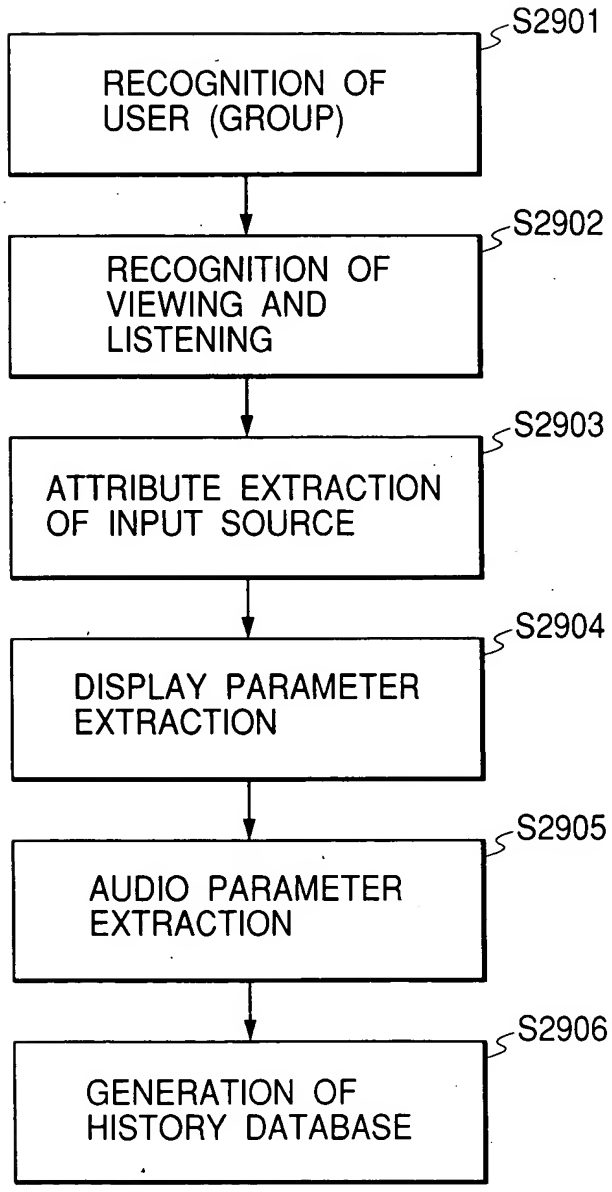

1A
DIGITAL TV RECEIVING UNIT
SATELLITE
GROUND WAVE
CABLE
TUNER
101
DEMODULATION CIRCUIT
102
DESCRAMBLER
103
MPEG2 DEMULTIPLEXER
104
AUDIO DECODER
105
AUDIO
VIDEO DECODER
106
VIDEO
DATA DECODER
107
AUDIO CONTROL UNIT
108
DAC
134
SPEAKER
109a
HEADPHONE
109b
AUDIO EXTERNAL OUTPUT UNIT
109c
VIDEO INTERFACE
110a
VIDEO INTERFACE
110b
VIDEO INTERFACE
110c
RESOLUTION CONVERSION UNIT
111a
RESOLUTION CONVERSION UNIT
111b
RESOLUTION CONVERSION UNIT
111c
GRAPHICS ACCELERATOR
115
MULTI-SCREEN SYNTHESIS CONTROL UNIT
112
GRAPHICS MEMORY
113
OUTPUT CONTROL UNIT
DISPLAY
114
GRAPHIC BUS
CPU BUS
1B
EXTERNAL AV DEVICE
AUDIO
VIDEO
1C
EXTERNAL AV DEVICE
AUDIO
VIDEO
IEEE1394 INTERFACE
117a
IEEE1394 INTERFACE
117b
MODEM
118
PCMCIA INTERFACE
119
PRINTER INTERFACE
120
IC CARD INTERFACE
121
RAM
122
HISTORY DATABASE STORAGE UNIT
132
CPU
123
ATTRIBUTE DETECTING UNIT
130
DISPLAY AND AUDIO PARAMETER DETECTING UNIT
131
VIEWING AND LISTENING USER DETECTING UNIT
133
INFORMATION PROCESSING DEVICE
1D
USER INTERFACE
124
REMOTE CONTROL
125
EXTERNAL AV DEVICE e.g. DVD
EXTERNAL AV DEVICE e.g. D-VHS
INTERNET VIA TELEPHONE LINE OR CABLE
e.g. DIGITAL CAMERA
PRINTER

FIG. 29



EPSON Scan Image

FIG. 30

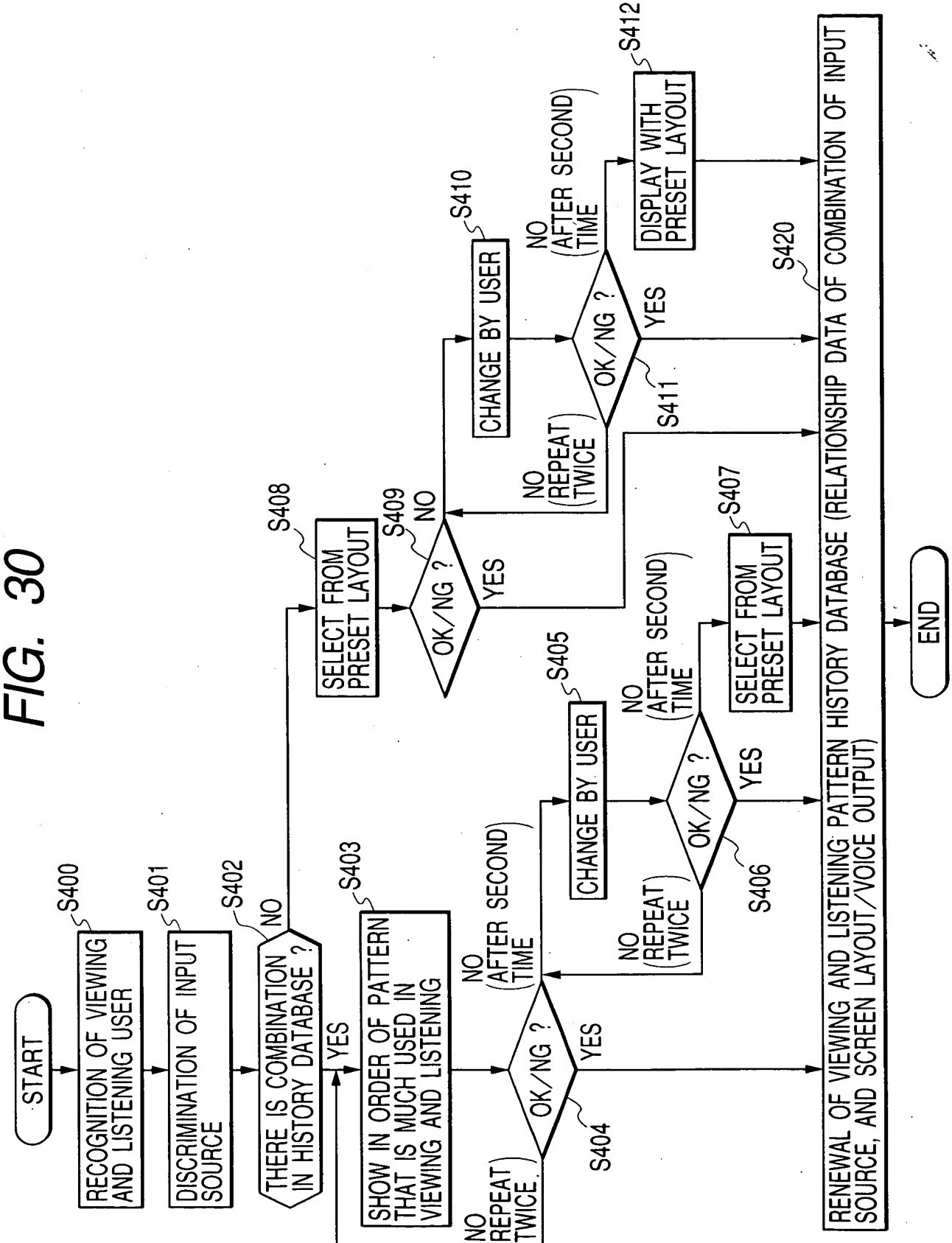

START
S400
RECOGNITION OF VIEWING AND LISTENING USER
S401
DISCRIMINATION OF INPUT SOURCE
S402
THERE IS COMBINATION IN HISTORY DATABASE ?
NO
YES
S403
SHOW IN ORDER OF PATTERN THAT IS MUCH USED IN VIEWING AND LISTENING
S404
OK/NG ?
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
YES
S405
CHANGE BY USER
S406
OK/NG ?
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
YES
S407
SELECT FROM PRESET LAYOUT
S408
SELECT FROM PRESET LAYOUT
S409
OK/NG ?
NO
YES
S410
CHANGE BY USER
S411
OK/NG ?
NO (REPEAT TWICE)
NO (AFTER SECOND TIME)
YES
S412
DISPLAY WITH PRESET LAYOUT
S420
RENEWAL OF VIEWING AND LISTENING PATTERN HISTORY DATABASE (RELATIONSHIP DATA OF COMBINATION OF INPUT SOURCE, AND SCREEN LAYOUT/VOICE OUTPUT)
END

FIG. 31

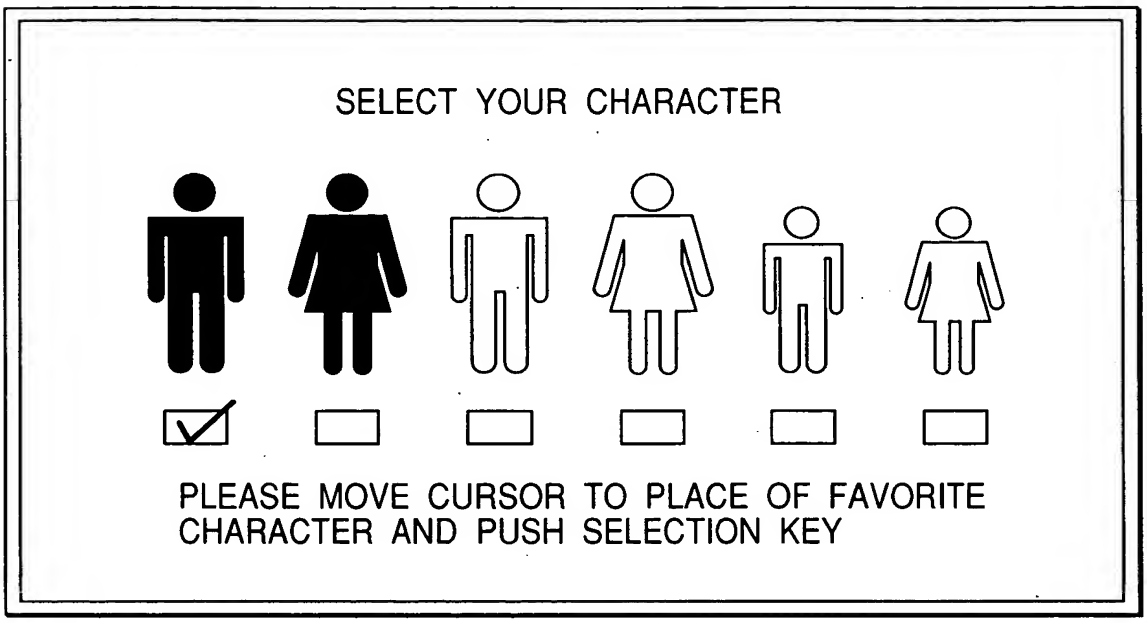

SELECT YOUR CHARACTER
PLEASE MOVE CURSOR TO PLACE OF FAVORITE CHARACTER AND PUSH SELECTION KEY

FIG. 32

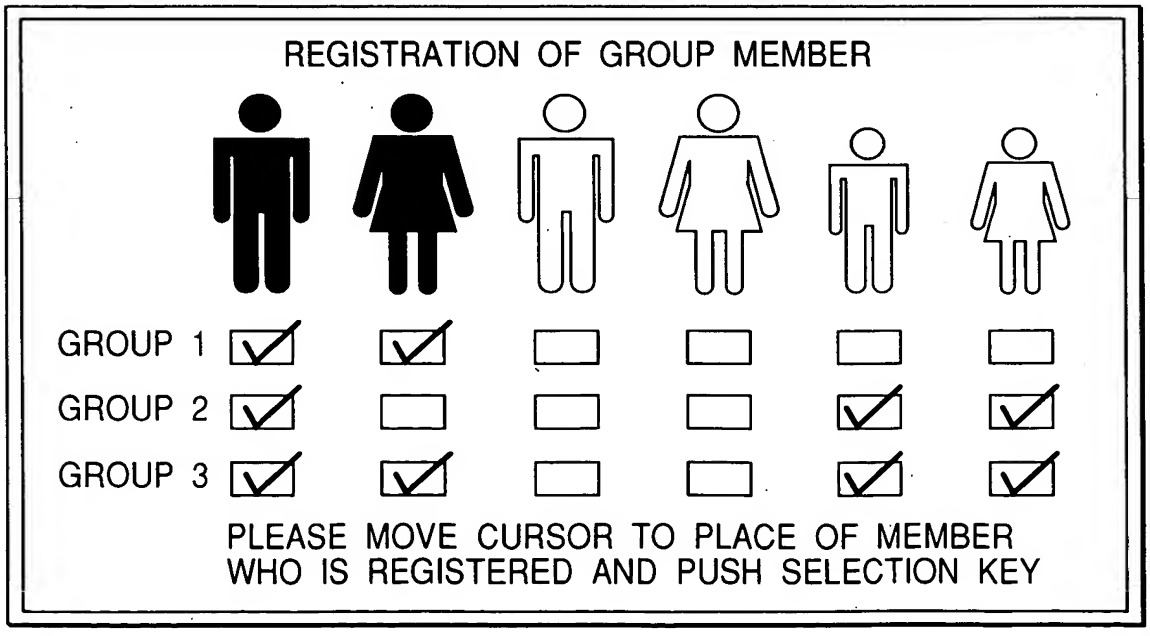

REGISTRATION OF GROUP MEMBER
GROUP 1
GROUP 2
GROUP 3
PLEASE MOVE CURSOR TO PLACE OF MEMBER WHO IS REGISTERED AND PUSH SELECTION KEY

FIG. 33

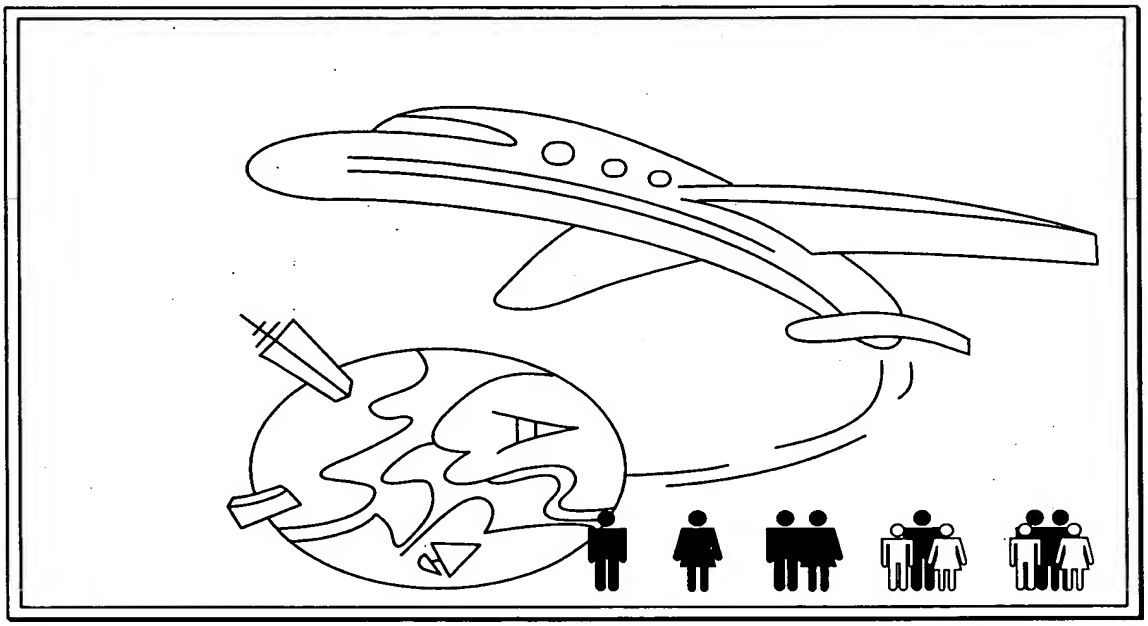


FIG. 34

USER/USER GROUP	INPUT SOURCE (ATTRIBUTE)					SCREEN LAYOUT					AUDIO					VIEWING AND LISTENING PATTERN
	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	
SINGLE A	TV2	–	–	–	–	L1	–	–	–	–	M1	–	–	–	–	A
GROUP 1	TV3	TV2	–	–	–	L1	L2	–	–	–	M2	S1	–	–	–	B
SINGLE A	TV4	ITN1	–	–	–	L3	L4	–	–	–	M2	M5	–	–	–	C
GROUP 2	TV5	DATA1	–	–	–	L3	L4	–	–	–	M1	S1	–	–	–	D
SINGLE A	EXT1	ITN2	–	–	–	L1	L9	–	–	–	M1	–	–	–	–	E
SINGLE A	TV3	ITN2	–	–	–	L1/L3	L4-1/-2	–	–	–	M1	M5	–	–	–	F
GROUP 3	TV1	DATA1	T1	DATA2	–	L3	L5	L6	L7	–	M4	M5	M5	M5	–	G

MEANING OF MARK

INPUT SOURCE

TV1 : MEDIA=DIGITAL TV BROADCAST GENRE=NEWS
TV2 : MEDIA=DIGITAL TV BROADCAST GENRE=SPORT
TV3 : MEDIA=DIGITAL TV BROADCAST GENRE=DRAMA
TV4 : MEDIA=DIGITAL TV BROADCAST GENRE=DOCUMENTARY
TV5 : MEDIA=DIGITAL TV BROADCAST GENRE=ANIMATION
ITN1 : MEDIA=INTERNET APPLICATION=INTERNET BROWSER
ITN2 : MEDIA=INTERNET APPLICATION=E-MAIL
DATA1 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=NEWS
DATA2 : MEDIA=DIGITAL DATA TRANSMISSION GENRE=WEATHER REPORT
T1 : MEDIA=INTERNAL FUNCTION APPLICATION=CLOCK DISPLAY

SCREEN LAYOUT

L1 : PARAMETER OF WIDE FULL SCREEN DISPLAY
L2 : PARAMETER OF 1/8 SIZE Pinp DISPLAY AT SCREEN LOWER RIGHT
L3 : WINDOW OF 2/3 SIZE AT SCREEN LEFT HALF
L4-1 : WINDOW OF 1/16 SIZE AT SCREEN CENTRAL PART
L4-2 : WINDOW OF 1/3 SIZE AT SCREEN RIGHT HALF
L5 TO L7 : DISPLAY PARAMETER OF WINDOW LAYOUT SHOWN IN ANOTHER FIGURE
L9 : PARAMETER OF ICON DISPLAY AT SCREEN LOWER RIGHT

AUDIO MODE

M1 : OUTPUT CHANNEL=MAIN SPEAKER MODE=STEREO
M2 : OUTPUT CHANNEL=MAIN SPEAKER MODE=MULTICHANNEL STEREO 1
M4 : OUTPUT CHANNEL=MAIN SPEAKER MODE=TWO LANGUAGES
M5 : NON-AUDIO
S1 : OUTPUT CHANNEL=HEADPHONE MODE=STEREO

FIG. 35

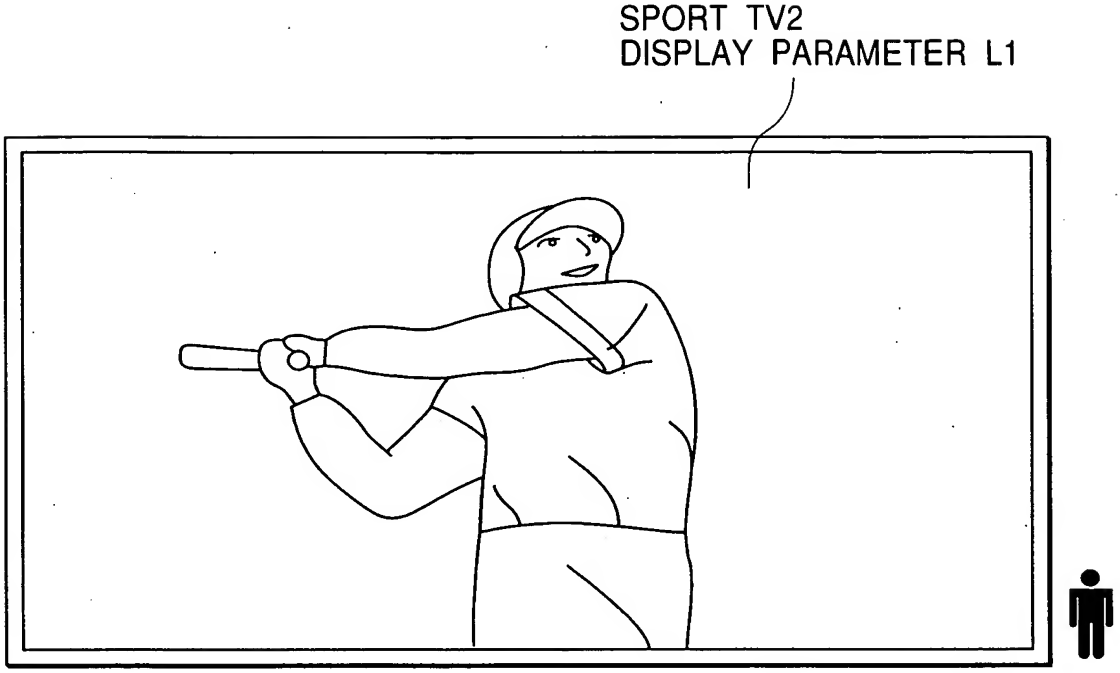

SPORT TV2
DISPLAY PARAMETER L1

FIG. 36

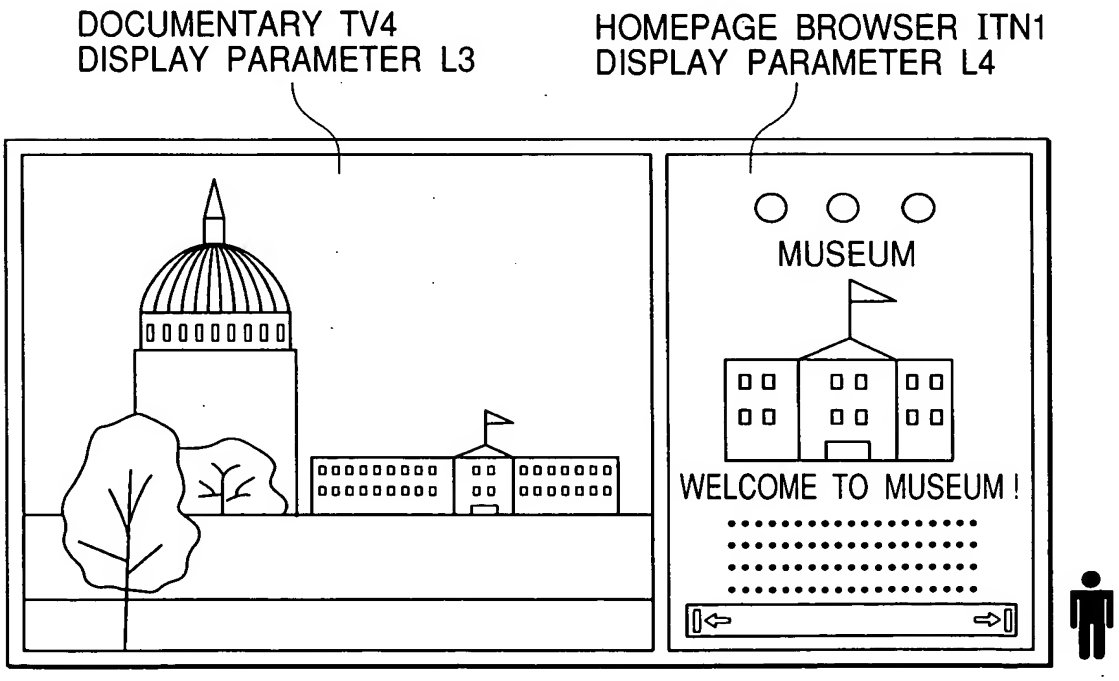

DOCUMENTARY TV4
DISPLAY PARAMETER L3
HOMEPAGE BROWSER ITN1
DISPLAY PARAMETER L4
MUSEUM
WELCOME TO MUSEUM !

FIG. 37

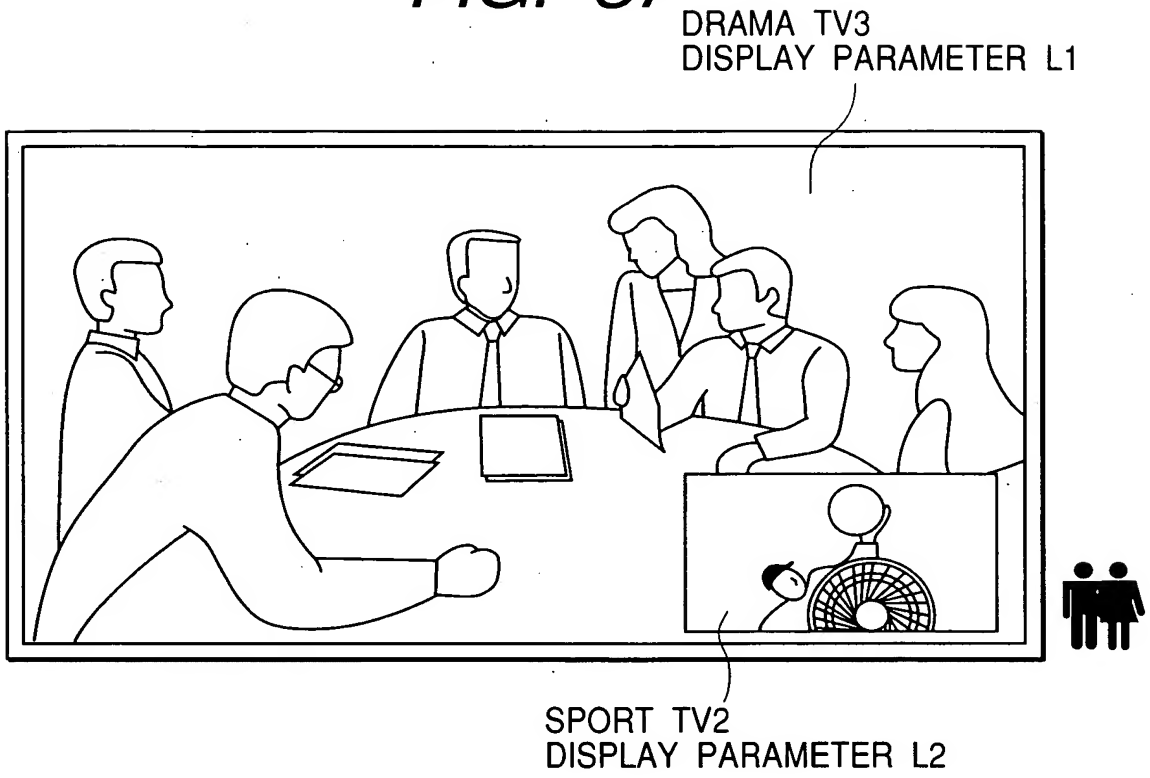
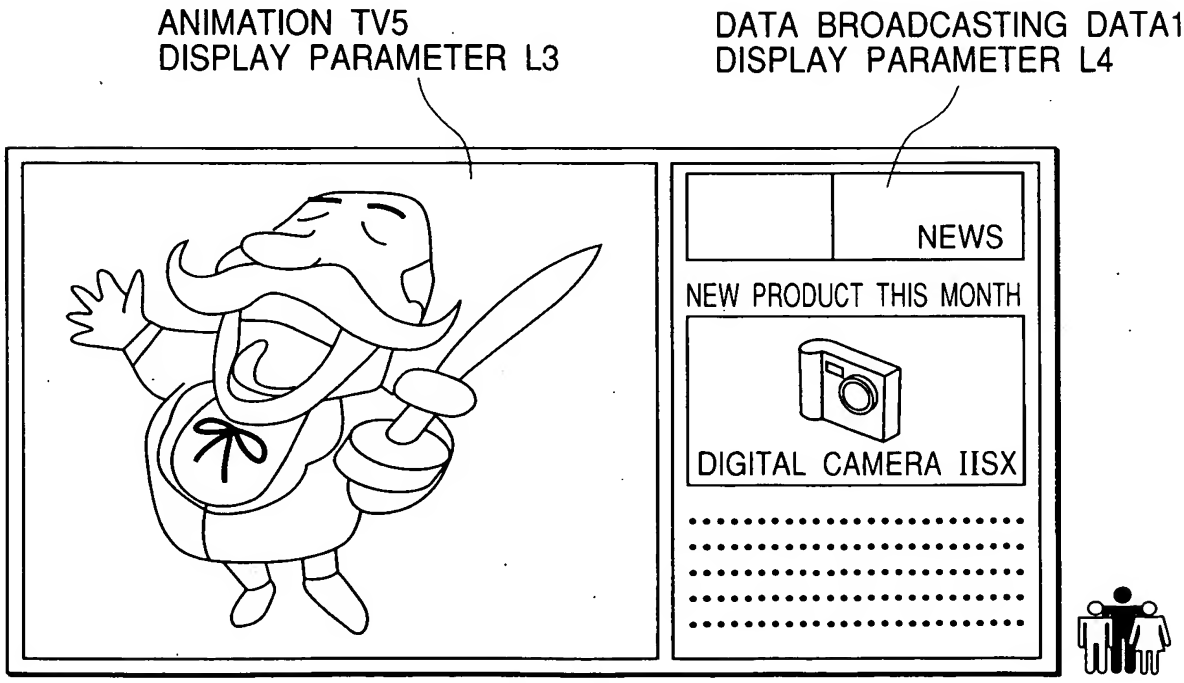

DRAMA TV3
DISPLAY PARAMETER L1
SPORT TV2
DISPLAY PARAMETER L2

FIG. 38


ANIMATION TV5
DISPLAY PARAMETER L3
DATA BROADCASTING DATA1
DISPLAY PARAMETER L4
NEWS
NEW PRODUCT THIS MONTH
DIGITAL CAMERA IISX